

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MANPREET S. KHAIRA, ERIK M. SEILIGMAN,
JEREMY S. CASAS, STEVE W. OTTO,
and MANDAR S. JOSHI

Appeal 2007-0451
Application 09/470,875
Technology Center 2100

Decided: April 5, 2007

Before JOSEPH F. RUGGIERO, ALLEN R. MACDONALD, and
JOHN A. JEFFERY, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from the Examiner's rejection of claims 1-5, 7, 9-51, and 53-56.¹ We have jurisdiction under 35 U.S.C. § 6(b).

STATEMENT OF THE CASE

Appellants invented a method for performing distributed simulation using multiple simulators. Specifically, an interface is associated with each simulator. Each simulator is then interfaced with a backplane via the simulator's associated interface. Messages are exchanged between the simulators and the backplane. Each interface converts messages between data formats associated with the backplane and simulator respectively. Utilizing separate interfaces to perform data format conversion precludes the need to reconfigure the simulation backplane each time a simulator is added or changed. *See generally* Specification 3-4. Claim 1 is illustrative:

1. A method for performing distributed simulation, comprising:

providing at least two simulators, wherein at least one of the at least two simulators represents at least one of a component and a system based on processors and chipsets;

providing a backplane having a fixed configuration;

¹ Although Appellants indicate that claims 1-56 are pending (Br. 2), claim 8 has been cancelled. Also, due to an apparent misnumbering of the claims when the application was originally filed, claim 6 was never presented during prosecution. Despite this apparent oversight, the claims were not renumbered in accordance with 37 C.F.R. § 1.126. *See* Claims Appendix (omitting claim 6 and indicating that claim 8 is cancelled).

In any event, only claims 1-5, 7, and 9-56 are pending in this application. Moreover, claim 52 was not rejected and is not therefore before us. *See* Br. 2; Answer 3-10; *see also* Final Rejection mailed Apr. 6, 2005.

associating an interface with each of the at least two simulators;

interfacing each of the at least two simulators with the fixed configuration backplane via the interface associated with each of the at least two simulators;

exchanging messages between the at least two simulators via the fixed configuration backplane and the associated interfaces; and

operating each interface to convert the messages between a data format associated with the fixed configuration backplane and a data format associated with the simulator associated with the interface.

The Examiner relies on the following prior art references to show unpatentability:

Dearth '247	US 5,732,247	Mar. 24, 1998
Dearth '267	US 5,881,267	Mar. 9, 1999
Worthington	US 5,881,270	Mar. 9, 1999
Eisenhofer '494	US 6,108,494	Aug. 22, 2000 (filed Aug. 24, 1998)
Ly	US 6,175,946 B1	Jan. 16, 2001 (filed Oct. 20, 1997)
Eisenhofer '836	US 6,339,836 B1	Jan. 15, 2002 (filed Aug. 24, 1998)

The Examiner's rejections are as follows:

1. Claims 1, 2, 4, 5, 7-10, 13-18, 21, 22, 24-27, 29-32, 34-43, 45, 46, 48-51, and 53-56 are rejected under 35 U.S.C. § 103(a) as unpatentable over Eisenhofer '494 in view of Worthington and further in view of Eisenhofer '836.

2. Claims 3, 7, 20, 23, 28, 33, 36, 44, and 47 are rejected under 35 U.S.C. § 103(a) as unpatentable over Eisenhofer '494 in view of Worthington, Eisenhofer '836, and further in view of Ly.
3. Claims 11 and 12 are rejected under 35 U.S.C. § 103(a) as unpatentable over Eisenhofer '494 in view of Worthington, Eisenhofer '836, and further in view of Dearth '267.
4. Claim 19 is rejected under 35 U.S.C. § 103(a) as unpatentable over Eisenhofer '494 in view of Worthington, Eisenhofer '836, and further in view of Dearth '247.
5. Claims 11 and 12 are rejected under 35 U.S.C. § 103(a) as unpatentable over Eisenhofer '494 in view of Worthington, Eisenhofer '836, and further in view of Dearth '247.

Rather than repeat the arguments of Appellants or the Examiner, we refer to the Briefs and the Answer for their respective details. In this decision, we have considered only those arguments actually made by Appellants. Arguments which Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2004).

OPINION

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the invention set forth in claims 1-5, 7, 9-28, 34-51, and 54-56. We reach the opposite conclusion, however, with respect to claims 29-33 and 53. Accordingly, we affirm-in-part.

We consider first the Examiner's rejection of claims 1, 2, 4, 5, 7-10, 13-18, 21, 22, 24-27, 29-32, 34-43, 45, 46, 48-51, and 53-56 under 35 U.S.C. § 103(a) as unpatentable over Eisenhofer '494 in view of Worthington and further in view of Eisenhofer '836. In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966). If that burden is met, the burden then shifts to the Appellants to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

Regarding independent claims 1, 21, 26, 29, 34, and 51, the Examiner's rejection essentially finds that Eisenhofer '494 teaches a distributed simulation method with every claimed feature except for simulators representing components of a system based on a processor and chipset. Regarding independent claims 29, 34, 40, and 45, the Examiner adds that Eisenhofer '494 does not disclose validation as claimed. The Examiner cites Worthington as teaching these features and concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Eisenhofer '494 to provide multi-chip system models using individual system component models to enable testing and simulating an entire set of integrated circuits (Answer 3-4).

Regarding independent claim 1,² Appellants argue that the prior art does not teach or suggest associating an interface with each of the at least two simulators and operating each interface to convert the messages between a data format associated with the fixed configuration backplane and a data format associated with the simulator associated with the interface as claimed. Although Appellants acknowledge that the simulation backplane 210 of Eisenhofer '494 performs a data type conversion, Appellants emphasize that the claimed invention calls for messages to be converted by the interfaces associated with the respective simulators – not the simulation backplane as in Eisenhofer '494 (Br. 13-14; Reply Br. 2-4).

The Examiner contends that data conversion in Eisenhofer '494 occurs at the boundary between the simulator module interface(s) and the simulation backplane (Answer 10). The Examiner also notes that Eisenhofer '494 expressly states that the simulator interfaces 241-244 perform a number of functions including data type conversion (Answer 11).

We will not sustain the Examiner's rejection of independent claim 1. At the outset, we note that it is unclear on the record before us why the Examiner relied on the tertiary reference -- Eisenhofer '836 -- in the rejections. Although Eisenhofer '836 was cited in the initial statements of the rejections (*see* Answer 3-10), the reference was not further discussed in

² Appellants do not separately argue the other independent claims in the group comprising claims 1, 2, 4, 5, 7, 9, 10, 13-18, 21, 22, 24-27, 29-32, 34, 43, 45, 46, 48-51, and 53-56. *See* Br. 12 (noting claim 1 as exemplary); *see also* Br. 16 (arguing allowability of the other independent claims in the group for reasons similar to claim 1). Accordingly, we select independent claim 1 as representative. *See* 37 C.F.R. § 41.37(c)(1)(vii).

the grounds of rejections section. In essence, the Examiner's rejections are based solely on the teachings of Eisenhofer '494 and Worthington.³

In any event, we find that the cited references fail to teach or suggest the interfaces associated with each simulator converting the data format of messages as claimed. Eisenhofer '494 notes that the simulation backplane 210 performs a data type conversion to enable data to be reliably and efficiently exchanged between simulators (Eisenhofer '494, col. 12, ll. 34-61; col. 6, ll. 15-20).

The reference, however, does not reasonably teach or suggest that the interfaces associated with the respective simulators perform such a conversion. Although Eisenhofer '494 states that simulator interfaces 241-244 perform a number of functions including, among other things, data type conversions, it is unclear what type of data conversion is performed by the interfaces. The reference is simply silent regarding the nature of this data conversion. The Examiner's assertion that this data conversion corresponds to the claimed data format conversion (i.e., converting messages between a data format associated with the backplane and the simulator associated with the interface) is merely speculative, particularly in view of the data conversion function performed by the backplane in Eisenhofer '494.

In short, there is insufficient teaching or suggestion in the cited prior art to utilize an interface -- distinct from the backplane -- to convert the data format of messages between a data format associated with the fixed

³ Although the Examiner mentions Eisenhofer '836 substantively for the first time in responding to Appellants' arguments, the Examiner merely cites a passage from the reference and asserts -- without supporting analysis -- that the reference expressly teaches the claimed limitations. See Answer 13.

configuration backplane and a data format associated with the interface's associated simulator or component as claimed.

For at least these reasons, we will not sustain the Examiner's rejection of independent claim 1, as well as independent claims 21, 26, 34, 40, 45, 51, 54, and 55 which contain commensurate limitations. We likewise do not sustain the Examiner's rejection of dependent claims 2, 4, 5, 9, 10, 13-18, 22, 24, 25, 27, 35, 37-39, 41-43, 46, 48-50, and 56.

With regard to the rejection of dependent claims 3, 7, 11, 12, 19, 20, 23, 28, 36, 44, and 47, the examiner adds the teachings of both Dearth references and Ly to the previously cited references (Answer 7-10). But since these references do not cure the deficiencies noted above with respect to independent claims 1, 21, 26, 34, 40, and 45, the Examiner's rejection of claims 3, 7, 11, 12, 19, 20, 23, 28, 36, 44, and 47 is also not sustained.

We will, however, sustain the Examiner's rejection of independent claims 29 and 53 based on the collective teachings of Eisenhofer '494 and Worthington. Significantly, unlike the other independent claims, claims 29 and 53 do not recite a backplane. Rather, claims 29 and 53 merely call for, in pertinent part, converting test and response messages via at least one interface to and from first and second data formats respectively.

In our view, the simulation backplane 210 of Eisenhofer '494 with its data type conversion capability fully meets an "interface" as claimed giving the term its broadest reasonable interpretation. In short, nothing in claims 29 and 53 precludes the backplane from performing the data format conversions as claimed. Appellants' arguments regarding representative claim 1 are simply not commensurate with the scope of claims 29 and 53.

We sustain the Examiner's obviousness rejection of independent claims 29 and 53 based on the collective teachings of Eisenhofer '494 and Worthington since we may rely on fewer references than the Examiner in affirming a multiple-reference rejection under 35 U.S.C. § 103. *In re Bush*, 296 F.2d 491, 496, 131 USPQ 263, 266-67 (CCPA 1961); *In re Boyer*, 363 F.2d 455, 458 n.2, 150 USPQ 441, 444 n.2 (CCPA 1966).

For at least these reasons, we will sustain the Examiner's rejection of independent claims 29 and 53. Since Appellants have not separately argued the patentability of dependent claims 30-33, these claims fall with independent claim 29. *See In re Nielson*, 816 F.2d 1567, 1572, 2 USPQ2d 1525, 1528 (Fed. Cir. 1987); *see also* 37 C.F.R. § 41.37(c)(1)(vii).

DECISION

We have not sustained the Examiner's rejections with respect to claims 1-5, 7, 9-28, 34-51, and 54-56. We have, however, sustained the Examiner's rejections with respect to claims 29-33 and 53. Therefore, the Examiner's decision rejecting claims 1-5, 7, 9-51, and 53-56 is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED-IN-PART

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